

FIG.1

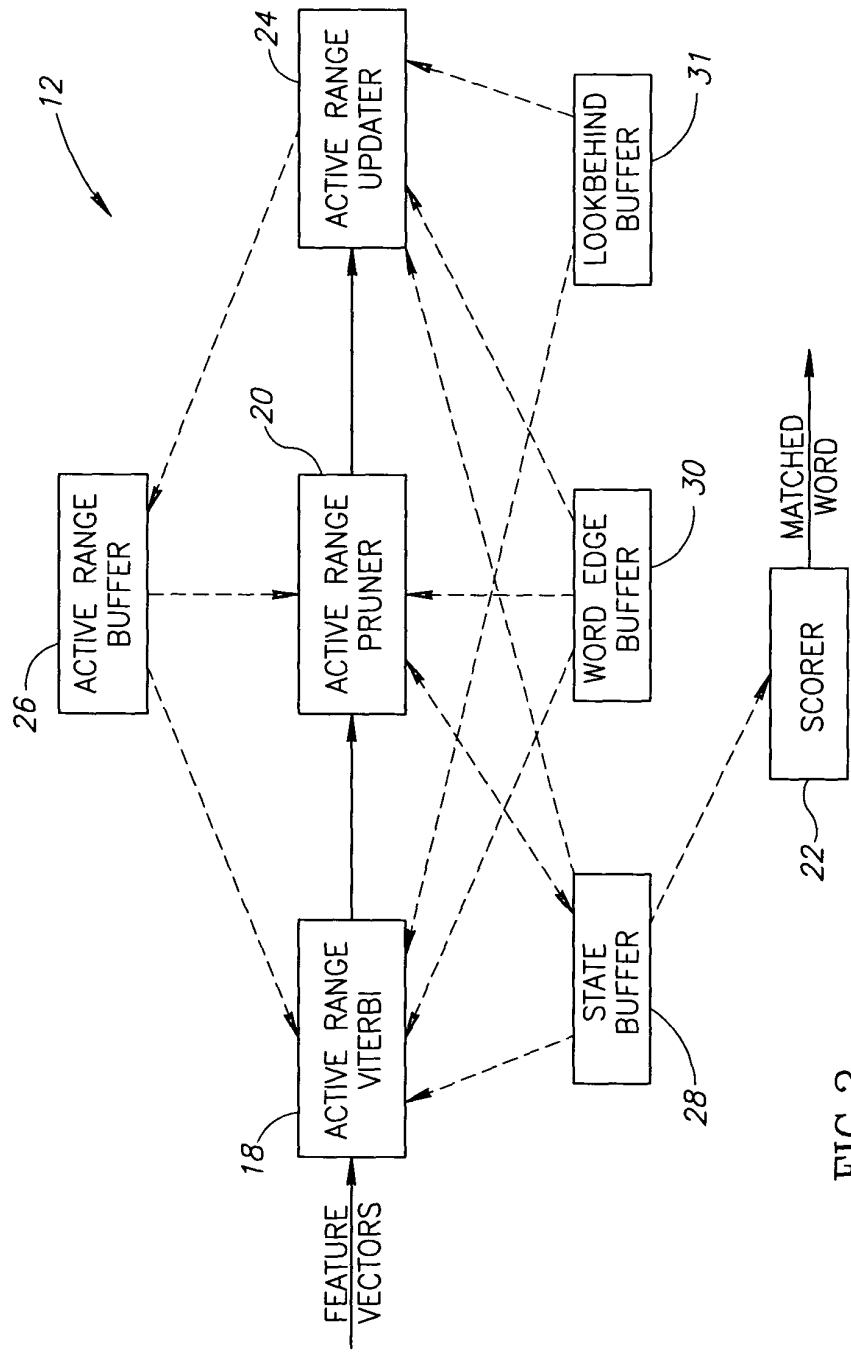


FIG.2

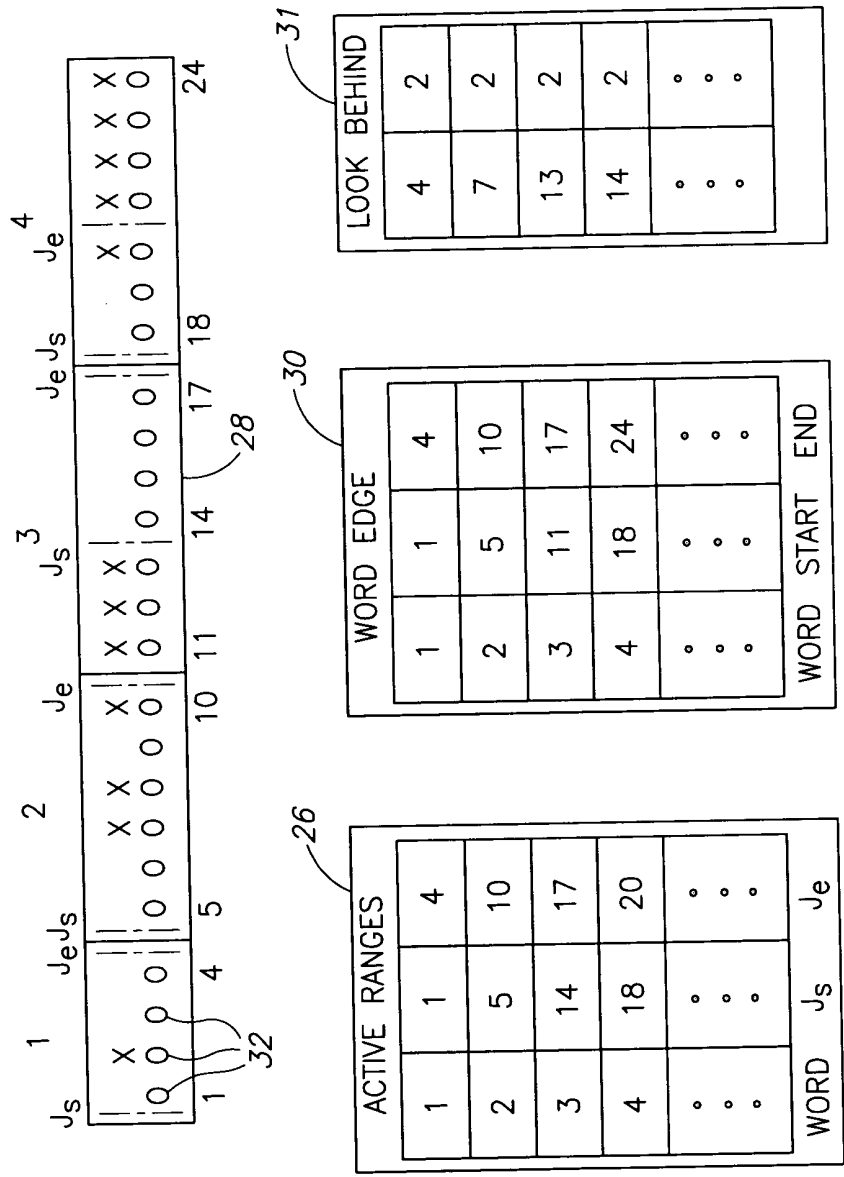


FIG.3

Active Range Viterbi

```
40: Loop from last word w,  
    42: Loop from end state  $j_e$  of wth word to start state  $j_s$   
        44: Do Viterbi operations  
    Endloop  
Endloop
```

Fig. 4

Active Range Pruner

```
46: Loop from word w,  
    48: Loop from start state  $j_s$  to end state  $j_e$  of wth word  
        50: Do pruning operations  
    Endloop  
Endloop
```

Fig. 5

Active Range Updater Version 1

For each word w in the state buffer:

{

Beginloop: Loop over states j of word w from start j_s of former word range to end j_e of former word range

52: If state j is active:

54: store state j as start state j_s

56: go to finding end of range

Endif

Endloop

no active states: set start and end states to noactivestate flag

58: go to End

finding end of range:

60: if the end state j_e is active, then

62: if (Range end state j_e = Word end state)

64: store state j_e as end state j_e

otherwise:

66: store state $j_e + 1$ as end state j_e

otherwise:

68: Search over states j from right to left

70: If state j is active:

72: store state $j + 1$ as end state j_e

}

Fig. 6

Active Range Updater Version 2

For each word w in the state buffer:

```
{
  Init: 78: mark start_range_was_found as false
        80: Mark max_state_available as 0;
  Beginloop: Loop over states j of word w from start  $j_s$ , of former word range
to end  $j_e$ , of former word range
        82: If state j is active and start_range_was_found is false:
              84: store state j as start state  $j_s$ 
              86: mark start_range_was_found as true
        Endif
        88: Loop over "goto" states  $j_k$  of state j
              89: if state  $j_k$  is active:
                    90: If goto state  $j_k$  is  $>$  max_state_available
                    92:   max_state_available =  $j_k$ 
              Endif
        Endloop
  Endloop
  94: If start_range_was_found is false
        96: set start and end states to noactivestate flag
        98: go to End
  Endif
  100: set end state  $j_e$  = max_state_available
End
}
```

Fig. 7